

**STATE FOREST LAND  
ENVIRONMENTAL CHECKLIST**

**Purpose of Checklist:**

The State Environmental Policy Act (SEPA), chapter 43.21C RCW, requires all governmental agencies to consider the environmental impacts of a proposal before making decisions. An environmental impact statement (EIS) must be prepared for all proposals with probable significant adverse impacts on the quality of the environment. The purpose of this checklist is to provide information to help you and the agency identify impacts from your proposal (and to reduce or avoid impacts from the proposal, if it can be done) and to help the agency decide whether an EIS is required.

**Instructions for Applicants:**

This environmental checklist asks you to describe some basic information about your proposal. Governmental agencies use this checklist to determine whether the environmental impacts of your proposal are significant, requiring preparation of an EIS. Answer the questions briefly, with the most precise information known, or give the best description you can. *Questions in italics are supplemental to Ecology's standard environmental checklist. They have been added by the DNR to assist in the review of state forest land proposals. Adjacency and landscape/watershed-administrative-unit (WAU) maps for this proposal are available on the DNR internet website at <http://www.dnr.wa.gov> under "SEPA Center." These maps may also be reviewed at the DNR regional office responsible for the proposal. This checklist is to be used for SEPA evaluation of state forest land activities.*

You must answer each question accurately and carefully, to the best of your knowledge. In most cases, you should be able to answer the questions from your own observations or project plans without the need to hire experts. If you really do not know the answer, or if a question does not apply to your proposal, write "do not know" or "does not apply." Complete answers to the questions now may avoid unnecessary delays later. *All of the questions are intended to address the complete proposal as described by your response to question A-11. The proposal acres in question A-11 may cover a larger area than the forest practice application acres, or the actual timber sale acres.*

Some questions ask about governmental regulations, such as zoning, shoreline, and landmark designations. Answer these questions if you can. If you have problems, the governmental agencies can assist you.

The checklist questions apply to all parts of your proposal, even if you plan to do them over a period of time or on different parcels of land. Attach any additional information that will help describe your proposal or its environmental effects. The agency to which you submit this checklist may ask you to explain your answers or provide additional information reasonably related to determining if there may be significant adverse impact.

**Use of checklist for nonproject proposals:**

Complete this checklist for nonproject proposals, even though questions may be answered "does not apply." IN ADDITION, complete the SUPPLEMENTAL SHEET FOR NON PROJECT ACTIONS (part D).

For nonproject actions, the references in the checklist to the words "project," "applicant," and "property or site" should be read as "proposal," "proposer" and "affected geographic area," respectively.

**A. BACKGROUND**

1. Name of proposed project, if applicable:

*Timber Sale Name:* **SHUWAH JIGSAW**

*Agreement #:* **76289**

2. Name of applicant: **Dept. of Natural Resources**

3. Address and phone number of applicant and contact person:

**Mike Potter  
411 Tillicum Lane  
Forks, Wa. 98331  
(360)374-6131**

4. Date checklist prepared: **06/14/2004**

5. Agency requesting checklist:

**Dept. of Natural Resources**

6. Proposed timing or schedule (including phasing, if applicable):

- a. *Auction Date:* **10/26/04**  
b. *Planned contract end date (but may be extended):* **10/31/06**  
c. *Phasing:* **NA**

7. Do you have any plans for future additions, expansion, or further activity related to or connected with this proposal? If yes, explain.

*Timber Sale*

- a. *Site preparation:* **None anticipated.**  
b. *Regeneration Method:* **Hand planting**  
c. *Vegetation Management:* **Needs to be assessed 5 –7 years after harvest.**  
d. *Thinning:* **Needs to be assessed 12 - 15 years after harvest.**

*Roads* **None anticipated.**

*Rock Pits and/or Sale:* **None anticipated.**

*Other:* **NA**

8. List any environmental information you know about that has been prepared, or will be prepared, directly related to this proposal.

**All referenced documents will be available upon request during the SEPA comment period at the Olympic Region Office.**

**X** 303 (d) – listed water body in WAU: **X** temp ☐ sediment ☐ completed TMDL (total maximum daily load):

☐ Landscape plan:

**X** Watershed analysis: **Sol Duc**

☐ Interdisciplinary team (ID Team) report:

**X** Road design plan

☐ Wildlife report:

☐ Geotechnical report:

☐ Other specialist report(s):

☐ Memorandum of understanding (sportsmen's groups, neighborhood associations, tribes, etc.):

**X** Rock pit plan:

Other:

9. Do you know whether applications are pending for governmental approvals of other proposals directly affecting the property covered by your proposal? If yes, explain. **No**

10. List any government approvals or permits that will be needed for your proposal, if known.

**X** HPA **X** Burning permit ☐ Shoreline permit **X** Incidental take permit **X** FPA **X** Other: **Board of Natural Resources approval**

11. Give brief, complete description of our proposal, including the proposed uses and the size of the project and site. There are several questions later in this checklist that ask you to describe certain aspects of your proposal. You do not need to repeat those answers on this page. (Lead agencies may modify this form to include specific information on project description.)

a. *Complete proposal description:* **This proposal is located within the area covered by the Sol Duc Watershed Analysis. The findings of the analysis are mainly targeted at activities near and adjacent to water resources, mass wasting, unstable ground and surface erosion. This proposal does not contain any terrain that is considered unstable or is susceptible to mass wasting. Several mitigation measures were taken with this proposal to address soil protection and riparian protection. These mitigation efforts are detailed throughout this document.**

**This proposed timber sale is located approximately 17 miles northeast of Forks, Washington in Section 1 and 12 Township 29North, Range 13 West, W.M. It is located within the Sol Duc Valley and Sol Duc Lowlands Watershed Administrative Units (WAU's) and a Forest Practice Watershed Analysis has been completed for this area. The sale involves a regeneration harvest of mixed conifer species approximately 60 – 70 years of age. The estimated volume of this proposal is 3,311 MBF. It is a three unit timber sale located within the Olympic Experimental State Forest (OESF) encompassing approximately 94.3 acres. Unit 1 is approximately 79.3 acres in size, of this 67.6 acres is regeneration harvest and 11.7 acres have been left in Type 3 and 5 riparian leave areas. Unit 2 is approximately 8.4 acres in size. Of this 6.3 acres is regeneration harvest while 2.1 acres have been left in Type 3, 4 and 5 riparian leave areas. Unit 3 is approximately 6.6 acres in size with 5.6 acres being regeneration harvest and 1.0 acres as Type 5 riparian leave area.**

**This proposal is located in the southwestern reaches of the Sol Duc Valley WAU and in the extreme northeastern portion of the Sol Duc Lowlands WAU in area surrounded by private forest land ownership, USFS ownership and scattered DNR ownership. The surrounding area sees a moderate amount of recreation uses from hunting, berry picking and public land users.**

- b. *Timber stand description pre-harvest (include major timber species and origin date), type of harvest, overall unit objectives.*

Pre-Harvest Stand Description: **This timber sale is comprised of natural stands of second-growth mixed conifer species approximately 60 – 70 years of age. The average diameter of the timber found here is 16 inches. Slopes on this proposal range from approximately 10 – 50% throughout the sale area. Approximately 40% of Unit 1 was commercially thinned in 1998. This area has seen extensive blowdown and is being harvested at this time due to the blowdown potential. Understory vegetation is variable within these stands. Some areas see thick salal and various other types of brush growing, while other areas are very clean with little to no understory vegetation present.**

Type of Harvest: **This proposal will be a regeneration harvest of approximately 3,311 MBF of conifer timber approximately 60 - 80 years of age. All units will utilize both ground based and cable logging methods. Ground based logging will be restricted to shovel only.**

Overall unit Objectives: **Objectives for this proposal are to provide financial benefit to the State Forest Board trust under the guidelines provided by Forest Practice rules, DNR's Habitat Conservation Plan (HCP) and the Sol Duc Watershed Analysis. Specific objectives include riparian protection, green tree retention plan, protection of soils and unstable slopes and procedures pertaining to threatened and endangered species.**

**Riparian protection measures were designed for all waters in and adjacent to this proposal in accordance with DNR's OESF Riparian strategy.**

**The sale will have green retention trees dispersed and aggregated throughout the site. Large structurally unique trees were targeted for retention as well as exposed windfirm trees along windward edges of the stands. These marked leave trees and leave tree clumps will expedite the development of a more diverse, multi-storied canopy layer in the future stand.**

**Contract language and equipment limitations will help to reduce soil impacts. No road construction will be allowed on this proposal between Oct.15 and April 30 to minimize exposure to soil erosion and rutting during the wet winter and spring months. No rubber tired skidders will be allowed and harvest operations will be suspended during periods of weather conditions when rutting may occur.**

**This proposal is located within the Shuwah Creek spotted owl circle, which is a status 1R circle. This proposal was identified as non marbled murrelet by the OESF murrelet model and conforms to the OESF’s long term murrelet strategy.**

c. Road activity summary. See also forest practice application (FPA) for maps and more details.

Type of Activity	How Many	Length (feet) (Estimated)	Acres (Estimated)	Fish Barrier Removals (#)
Construction		1,790'	.49	0
Reconstruction		0		0
Abandonment		795'	.22	0
Bridge Install/Replace	0			1
Culvert Install/Replace (fish)	1			0
Culvert Install/Replace (no fish)	0			

**Approximately 1,790’ of new construction is proposed for this sale. Rock will come from DNR’s Mary Clark Pit located in Sec.3 (29 – 13) or may be obtained from an approved commercial source.**

12. Location of proposal. Give sufficient information for a person to understand the precise location of your proposed project, including a street address, if any, and section, township, and range, if known. If a proposal would occur over a range of area, provide the range or boundaries of the site(s). Provide a legal description, site plan, vicinity map, and topographic map, if reasonably available. While you should submit any plans required by the agency, you are not required to duplicate maps or detailed plans submitted with any permit applications related to this checklist. (See timber sale map. See also color landscape/WAU map on the DNR website <http://www.dnr.wa.gov> under “SEPA Center.”)

a. Legal description:

T29N R13W S1  
T29N R13W S12

b. Distance and direction from nearest town (include road names): **This proposal is located approximately 17 road miles northeast of Forks, Wa off the B-3100 road system.**

c. Identify the watershed administrative unit (WAU), the WAU Sub-basin(s), and acres. (See also landscape/WAU map on DNR website <http://www.dnr.wa.gov> under “ SEPA Center.”)

WAU Name	WAU Acres	Proposal Acres
SOL DUC LOWLANDS	21006	85
SOL DUC VALLEY	47105	33

13. Discuss any known future activities not associated with this proposal that may result in a cumulative change in the environment when combined with the past and current proposal(s). (See digital ortho-photos for WAU and adjacency maps on DNR website <http://www.dnr.wa.gov> under “SEPA Center” for a broader landscape perspective.)

**This proposal is located within the Sol Duc Valley and the Sol Duc Lowlands WAU’s. The Sol Duc Valley WAU has mixed forestland ownership with the major landowners being the Department of Natural Resources, United States Forest Service and private forest landowners. There are several small communities located within the WAU and mixed rural residential uses. State and private forestland ownerships are generally scattered throughout the WAU with most being in the lower elevations. The Forest Service ownerships are concentrated in both the higher elevations and the lowlands, while small private landowners are scattered along the major transportation routes in the lower elevations. The DNR has approximately 12,700 acres of ownership within the Sol Duc Valley WAU, which equates to approximately 27% of the total WAU acreage. Approximately 2,000 acres of these lands have seen regeneration harvests and 505 acres have been partial cut sales within the past seven years. There is currently a sold DNR sale of approximately 130 acres located approximately three miles to the east of this proposal. It is anticipated that this proposal will sell in the winter of 2004. Over the past 5 – 10 years private industrial forestlands scattered within the WAU have reached rotation age and are currently being harvested on an estimated rotation cycle of 40 – 50 years under the prescriptions of the watershed analysis and the forest practice laws. Federal timberlands have seen very little final harvest activities since the early 1980’s and are not anticipated to change for the foreseeable future. There have been some lowland federal partial cuts occurring within the past several years.**

**The Sol Duc Lowlands WAU also has mixed forestland ownership with the major landowner being large industrial private landowners. The Department of Natural Resources has forestland ownership checker boarded throughout the WAU. There are scattered residences and small private holdings throughout the WAU as well. The DNR has approximately 4,326 acres of ownership in the WAU, which equates to 19% of the total land in the WAU. Over the past seven years the DNR has harvested approximately 335 acres in regeneration harvests and 180 acres in partial cut harvests within the WAU. There are no immediate plans for future harvest on DNR ownership within this WAU. Over the past 5 – 10 years private industrial forestlands within the WAU have reached rotation age and are currently being harvested on an estimated rotation age of 40 – 50 years in accordance with the Sol Duc Watershed Analysis. Most of the private forestland is on its second to third harvest rotation.**

The Sol Duc Watershed Analysis identified activities on steep ground in this WAU that likely have contributed to increased peak flows in individual sub-basins. Most of this would have been caused by high elevation harvest and broadcast burning on federal lands during the 1970's and early 1980's. The analysis identifies several larger drainages originating on Forest Service land that have experienced some past increase to peak flows linked to past harvest practices in the higher elevations. These drainages are located approximately 10 -12 miles upstream of this proposal and are not impacted by this activity. The analysis also shows that the main stem of the Sol Duc has not experienced any increase to peak flows and has not been impacted by the sub basins mentioned above. This proposal is located within the boundaries of the Olympic Experimental State Forest, which has specific riparian, spotted owl and marbled murrelet conservation strategies which are managed under the departments Habitat Conservation Plan.

The DNR's Habitat Conservation Plan requires the department to manage landscapes with the intent to preserve and enhance habitat used by fish and older forest dependent species. This agreement substantially helps the department to mitigate for any potential harmful cumulative effects related to its management activities. The HCP is designed to protect and promote fish and wildlife species and their habitats over a broad regional area. The applicable HCP strategies incorporated into this proposal are as follows:

- \* Retaining Riparian Management Zones (RMZ 's) on all streams,
- \* Deferring harvest on unstable slopes,
- \* Retaining a minimum of eight leave trees per acre dispersed and aggregated throughout the unit,
- \* Designing, constructing, and maintaining a road system to minimize potential adverse effects on the environment.
- \* Procedures pertaining to threatened and endangered species.

Several measures have been taken to ensure that this proposal will not contribute to adverse environmental impacts through cumulative effects. Riparian management zones 150' wide on Type 3 streams, 100' wide on Type 4 streams and 20-25' wide on Type 5 streams have been incorporated into the sale design. Approximately 14.8 acres of the original proposal were tagged out of the sale for riparian protection. There will be no harvest activities within any of the RMZ's associated with this proposal, which will protect water quality, stream bank integrity and soils. Furthermore, the RMZ's will develop old-forest characteristics that, in combination with other strategies, will help support old-forest dependant wildlife populations in the future. The Sol Duc Road Maintenance and Abandonment Plan (RMAP) identified a fish barrier on an existing road crossing on the B-3200 road system in the vicinity of this proposal. This sale will remove this blockage and install an engineered fish passage culvert at this location.

The OESF marbled murrelet model identifies the sale area as non-habitat for marbled murrelets.

Retaining a minimum of eight leave trees per acre in the proposal area provides legacy elements for recruitment of future snags, coarse woody debris, multi-layered stands, and large diameter trees. In combination these features will provide elements of old forest habitat characteristics within the next rotation. By managing to develop climax forest characteristics, habitats will be provided for wildlife species dependent on old forest habitat.

New roads will be constructed in compliance with HCP and Forest Practice requirements and will divert storm water onto stable forest floor to prevent delivery of sediment to live streams. Timing restrictions on road construction activities will prevent activities during the wet winter and fall months when surface erosion and siltation could potentially occur. To protect soil productivity and reduce erosion, ground based operations will be suspended during periods of wet weather or wet soil conditions when rutting of skid

B. ENVIRONMENTAL ELEMENTS

1. Earth

a. General description of the site (check one):

☐Flat, ☐Rolling, ☒Hilly, ☐Steep Slopes, ☐Mountainous, ☐Other:

- 1) General description of the WAU or sub-basin(s) (landforms, climate, elevations, and forest vegetation zone).  
The Sol Duc Valley WAU is generally moderate terrain with an elevation range of 275' to 3009' with the average being 962'. This proposal is located in the lower elevations of the WAU. There are a total of 45,357 acres in the WAU with 12,732 acres of DNR ownership. The major timber types present are Douglas fir and western hemlock with minor amounts of red cedar and hardwoods.  
The Sol Duc Lowlands WAU is generally moderate terrain with an elevation range of 39 to 1,830 feet with the average being 451 feet. The average precipitation in the WAU is approximately 115 inches per year. The major timber type in the WAU is Western hemlock. There are a total of 22,394 acres in the WAU with 4,326 acres of DNR ownership.

2) Identify any difference between the proposal location and the general description of the WAU or sub-basin(s).

This timber sale proposal is located in the lower elevations of the Sol Duc Valley WAU and in the upper reaches of the Sol Duc Lowland WAU. Approximatel 60 – 70% of Unit 1 is within the Sol Duc Lowlands, while the remainder along with Units 2 and 3 are in the Sol Duc Valley WAU. All units are located on rolling to hilly terrain with the maximum slopes being approximately 50%. All units are comprised mainly of western hemlock with minor amounts of Douglas fir, Sitka spruce and western red cedar being present.

- b. What is the steepest slope on the site (approximate percent slope)? **Approximately 50%.**
- c. What general types of soils are found on the site (for example, clay, sand, gravel, peat, muck)? If you know the classification of agricultural soils, specify them and note any prime farmland. *Note: The following table is created from state soil survey data. It is a roll-up of general soils information for the soils found in the entire sale area. It is only one of several site assessment tools used in conjunction with actual site inspections for slope stability concerns or erosion potential. It can help indicate potential for shallow, rapid soil movement, but often does not represent deeper soil sub-strata. The actual soils conditions in the sale area may vary considerably based on land-form shapes, presence of erosive situations, and other factors. The state soil survey is a compilation of various surveys with different standards.*

State Soil Survey #	Soil Texture or Soil Complex Name	% Slope	Acres	Mass Wasting Potential	Erosion Potential
5733	SILT LOAM	5-35	110	LOW	LOW
7421	V.GRAVELLY LOAM	35-70	7	MEDIUM	HIGH
7435	V.GRAVELLY SANDY LOAM	0-5	1	INSIGNIFIC'T	LOW

- d. Are there surface indications or history of unstable soils in the immediate vicinity? If so, describe.

1) Surface indications: **None have been observed.**

- 2) Is there evidence of natural slope failures in the sub-basin(s)?  
☐No ☒Yes, type of failures (shallow vs. deep-seated) and failure site characteristics:  
**There is some evidence of natural slope failures in the steeper, higher areas of both WAU’s. These are generally associated with steep stream channels and headwalls. None of these areas are found within the immediate area of the proposal.**

- 3) Are there slope failures in the sub-basin(s) associated with timber harvest activities or roads?  
☐No ☒Yes, type of failures (shallow vs. deep-seated) and failure site characteristics:  
Associated management activity:

**Slope failures associated with harvest activities have occurred on steep ground within the WAU’s. Most of these have been associated with timber harvest and past road construction practices on unstable slopes.**

- 4) Is the proposed site similar to sites where slope failures have occurred previously in the sub-basin(s)?  
☒No ☐Yes, describe similarities between the conditions and activities on these sites:  
**This proposal does not contain any terrain or features that would be considered unstable.**

- 5) Describe any slope stability protection measures (including sale boundary location, road, and harvest system decisions) incorporated into this proposal.

**All streams within this proposal have been buffered with riparian leave areas. See question #3 (water) below for a description of the riparian protection. Roads were designed on stable locations. Ground based logging will be limited to shovel only on slopes not exceeding 35% to minimize surface erosion.**

- e. Describe the purpose, type, and approximate quantities of any filling or grading proposed. Indicate source of fill.  
*Approx. acreage new roads:49 Approx. acreage new landings:.5 Fill source: Fill for the designed fish passage culvert will come from Mary Clark Pit.*
- f. Could erosion occur as a result of clearing, construction, or use? If so, generally describe.  
**A small amount of incidental erosion could occur during the course of timber harvesting and log hauling.**
- g. About what percent of the site will be covered with impervious surfaces after project construction (for example, asphalt or buildings)? *Approximate percent of proposal in permanent road running surface (includes gravel roads):*  
**Less than 1%.**
- h. Propose measures to reduce or control erosion, or other impacts to the earth, if any:  
*(Include protection measures for minimizing compaction or rutting.)*

Harvesting and road construction will be restricted during periods of heavy rainfall when rutting and surface erosion may occur. Roads will be constructed with properly located ditches, ditch outs and cross drains to divert water onto stable forest floor and/or into stable natural drainages. Ground based operations on all units will be suspended during periods of wet weather or wet soil conditions when rutting of skid or shovel roads begins. Leave trees are scattered and clumped throughout the sale units. All timber is to be felled and yarded away from riparian management zones. Harvested areas will be reforested within one growing season of the expiration of the contract.

2. Air

- a.

What types of emissions to the air would result from the proposal (i.e., dust from truck traffic, rock mining, crushing or hauling, automobile, odors, industrial wood smoke) during construction and when the project is completed? If any, generally describe and give approximate quantities if known.

**Insignificant amounts of engine exhaust from logging equipment and dust from passage of log trucks. Logging slash, if burned, will be burned adhering to the State's smoke management plan.**
- b.

Are there any off-site sources of emissions or odor that may affect your proposal? If so, generally describe.

**No**
- c.

Proposed measures to reduce or control emissions or other impacts to air, if any:

**No**

3. Water

a. Surface:

- 1)

Is there any surface water body on or in the immediate vicinity of the site (including year-round and seasonal streams, saltwater, lakes, ponds, wetlands)? If yes, describe type and provide names. If appropriate, state what stream or river it flows into. (See timber sale map and forest practice base maps.)

**There are three Type 3 streams, one Type 4 stream and numerous Type 5 streams associated with this proposal.**

a)

Downstream water bodies: **Sol Duc River and Shuwah Creek**

b)

Complete the following riparian & wetland management zone table:

Wetland, Stream, Lake, Pond, or Saltwater Name (if any)	Water Type	Number (how many?)	Avg RMZ/WMZ Width in Feet (per side for streams)
Unnamed	3	3	150
Unnamed	4	1	100
Unnamed	5	6	20 -25

c)

List RMZ/WMZ protection measures including silvicultural prescriptions, road-related RMZ/WMZ protection measures, and wind buffers.

**These streams have been protected with riparian buffers as described above . No harvest will occur within any of these buffers. No equipment will be allowed to operate within 30’ of theType 5 waters.**
- 2)

Will the project require any work over, in, or adjacent to (within 200 feet) to the described waters? If yes, please describe and attach available plans.

☐No ☒yesSee RMZ/WMZ table above and timber sale map.)

Description (include culverts):

**See 1) c) above for protection measures and description of activities within the WMZ .**

**The Sol Duc RMAP identified a fish barrier on an existing road crossing in a Type 3 stream associated with Unit 1 on the B-3100 road system. This sale will remove this blockage and install an engineered fish passage culvert at this location. See road plan, available at the Olympic Region Office, for details of this work.**
- 3)

Estimate the amount of fill and dredge material that would be placed in or removed from surface water or wetlands and indicate the area of the site that would be affected. Indicate the source of fill material.

**Approximately 55 yards of fill material will be used for the Type 3 culvert installation described above. This includes material being used to back fill the inside of the culvert.**
- 4)

Will the proposal require surface water withdrawals or diversions? Give general description, purpose, and approximate quantities if known. (Include diversions for fish-passage culvert installation.)

☐No ☒Yes, description:

**Water at the Type 3 installation and the Type 3 removal shall be pumped around the culvert site until all earthwork and stream enhancement work is accomplished.**
- 5)

Does the proposal lie within a 100-year floodplain? If so, note location on the site plan.

☒No ☐Yes, describe location:
- 6)

Does the proposal involve any discharges of waste materials to surface waters? If so, describe the type of waste and anticipated volume of discharge.

☒No ☐Yes, type and volume:
- 7)

Does the sub-basin contain soils or terrain susceptible to surface erosion and/or mass wasting? What is the potential for eroded material to enter surface water?

**These WAU's do contain terrain susceptible to surface and/or mass erosion. Generally, the high potential areas are located in the higher elevations and are associated with steep unstable terrain. The watershed analysis identifies some soils and areas that show higher potential for slope failures. Again these areas are found in the higher elevations in the upper reaches of the stream channels. Surface erosion control/prevention measures discussed in B.1.h. would minimize or prevent delivery to surface waters.**

- 8) *Is there evidence of changes to the channels in the WAU and sub-basin(s) due to surface erosion or mass wasting (accelerated aggradations, erosion, decrease in large organic debris (LOD), change in channel dimensions)?*

☐No ☒Yes, describe changes and possible causes:

**There is some evidence of changes to stream channels on some streams within the WAU due to both natural and human caused events. Most are located in the higher elevations of the WAU on steep terrain.**

- 9) *Could this proposal affect water quality based on the answers to the questions 1-8 above?*

☐No ☒Yes, explain:

**This proposal is consistent with the Sol Duc Watershed Analysis and the HCP's OESF riparian procedures., This proposal is expected to have minimal to no effect on water quality due to protection measures listed in B1h above.**

- 10) *What are the approximate road miles per square mile in the WAU and sub-basin(s)?* **@.9 in the Sol Duc Valley WAU and 3.1 in the Sol Duc Lowlands WAU.**

*Are you aware of areas where forest roads or road ditches intercept sub-surface flow and deliver surface water to streams, rather than back to the forest floor?*

☐No ☒Yes, describe:

**There is an example of this located near Unit 1 of this proposal. This will be addressed and fixed with this timber sale by installing a cross drain ditch relief culvert prior to a Type 3 stream. It is likely there are other roads within the WAU's that do intercept sub-surface flow and do indeed deliver ditchwater into streams. However, in recent years road construction and maintenance practices have addressed this concern and are making efforts to place ditch water onto stable forest floors.**

- 11) *Is the proposal within a significant rain-on-snow (ROS) zone? If not, **STOP HERE** and go to question B-3-a-13 below. Use the WAU or sub-basin(s) for the ROS percentage questions below.*

☒No ☐Yes, approximate percent of WAU in significant ROS zone.

*Approximate percent of sub-basin(s):*

- 12) *If the proposal is within the significant ROS zone, what is the approximate percentage of the WAU or sub-basin(s) within the significant ROS zone (all ownerships) that is (are) rated as hydrologically mature?*

- 13) *Is there evidence of changes to channels associated with peak flows in the WAU or sub-basin(s)?*

☐No ☒Yes, describe observations:

**The Sol Duc Watershed Analysis identifies several larger drainages originating on Forest Service land in the Upper Sol Duc WAU that have experienced some past increase to peak flows, however it does not indicate any drainages within the Sol Duc WAU that have experienced these problems. The analysis also shows that the main stem of the Sol Duc has not experienced any increase to peak flows and has not been impacted by the sub basins mentioned above.**

- 14) *Based on your answers to questions B-3-a-10 through B-3-a-13 above, describe whether and how this proposal, in combination with other past, current, or reasonably foreseeable proposals in the WAU and sub-basin(s), may contribute to a peak flow impact.*

**Based on the findings of the Sol Duc Watershed Analysis and the mitigation measures taken on this proposal, this proposal should not significantly contribute to potential future peak flow issues.**

- 15) *Is there water resource (public, domestic, agricultural, hatchery, etc.), or area of slope instability, downstream or downslope of the proposed activity that could be affected by changes in surface water amounts, quality, or movements as a result of this proposal?*

☒No ☐Yes, possible impacts:

- 16) *Based on your answers to questions B-3-a-10 through B-3-a-15 above, note any protection measures addressing possible peak flow/flooding impacts.*

**This proposal is expected to have no noticeable impact on peak flow or flooding in this WAU. Refer to B1h above for mitigation factors applied.**

b. Ground Water:

- 1) Will ground water be withdrawn, or will water be discharged to ground water? Give general description, purpose, and approximate quantities if known.

**No**

- 2) Describe waste material that will be discharged into the ground from septic tanks or other sources, if any (for example: Domestic sewage; industrial, containing the following chemicals; agricultural; etc.). Describe the general size of the system, the number of such systems, the number of houses to be served (if applicable), or the number of animals or humans the system(s) are expected to serve.

**Does not apply.**

- 3) *Is there a water resource use (public, domestic, agricultural, hatchery, etc.), or area of slope instability, downstream or down slope of the proposed activity that could be affected by changes in groundwater amounts, timing, or movements as a result this proposal?*

☒No ☐Yes, describe:

a) *Note protection measures, if any.*

c. Water Runoff (including storm water):

- 1) Describe the source of runoff (including storm water) and method of collection and disposal, if any (include quantities, if known). Where will this water flow? Will this water flow into other waters? If so, describe. **Storm water runoff will be collected by road ditches and diverted through cross drain culverts onto the forest floor.**

- 2) Could waste materials enter ground or surface waters? If so, generally describe.  
**No**  
  
a) Note protection measures, if any.  
**None**
- d. Proposed measures to reduce or control surface, ground, and runoff water impacts, if any:  
(See surface water, ground water, and water runoff sections above, questions B-3-a-1-c, B-3-a-16, B-3-b-3-a, and B-3-c-2-a.)

4. Plants

- a. Check or circle types of vegetation found on the site:  
  
**X** deciduous tree: **X** alder, **X** maple  
**X** evergreen tree: **X** Douglas fir, **X** Pacific silver fir, **X** western hemlock, **X** Sitka spruce, **X** red cedar  
**X** shrubs: **X** huckleberry, **X** salmonberry, **X** salal
- b. What kind and amount of vegetation will be removed or altered? (See answers to questions A-11-a, A-11-b, B-3-a-1-b and B-3-a-1-c. The following sub-questions merely supplement those answers.) **This proposal will be harvesting approximately 3,311 mbf of second- growth conifer timber.**

- 1) 1) Describe the species, age, and structural diversity of the timber types immediately adjacent to the removal area. (See landscape/WAU and adjacency maps on the DNR website at: <http://www.dnr.wa.gov> under “SEPA Center.”)  
**Unit 1 is bordered to the south by DNR lands harvested 5-6 years ago and a Type 3 riparian management zone, to the east by a stand of similar aged DNR timber that was commercially thinned in 1998, to the north by 35 year old DNR second-growth timber and to the west by a 5-6 year old DNR plantation**  
**Unit 2 is bordered to the north by a stand of similar aged DNR timber that was commercially thinned in 1998, to the east by a 5-6 year old DNR plantation, to the north by similar aged DNR timber and to the west by 35 year old DNR second-growth timber.**  
**Unit 3 is bordered to the north by a stand of similar aged DNR timber that was commercially thinned in 1998, to the west by a 5-6 year old DNR plantation, to the north by similar aged DNR timber and to the east a 5-6 year old DNR plantation.**
- 2) Retention tree plan:  
: **All units of this proposal have retention trees both aggregated and dispersed throughout the areas. Retention trees have been incorporated within the Type 5 riparian areas and individually marked retention trees dispersed throughout the units.**

- b. List threatened or endangered plant species known to be on or near the site.

TSU Number	FMU_ID	Common Name	Federal Listing Status	WA State Listing Status
None Found in Database Search				

- d. Proposed landscaping, use of native plants, or other measures to preserve or enhance vegetation on the site, if any:  
**Our retention tree plan which is leaving eight wildlife and legacy trees per acre and the riparian buffers left on all streams adjacent to the proposal will enhance diversity on the site. The harvest units will be reforested with a mixture of conifer species including western hemlock, Douglas fir and red cedar all of which are native species to this site.**

5. Animal

- a. Circle or check any birds animals or unique habitats which have been observed on or near the site or are known to be on or near the site:  
  
**X** birds: **X** hawk, **X** eagle, **X** songbirds, **X** pigeon, **X** other: **forest grouse, crows, owls**  
**X** mammals: **X** deer, **X** bear, **X** elk, **X** other: **: coyote, mountain beaver, rabbit, bat, squirrel, raccoon**  
**X** fish: **X** salmon, **X** trout,  
unique habitats: ☐ talus slopes, ☐ caves, ☐ cliffs, ☐ oak woodlands, ☐ balds, ☐ mineral springs
- b. List any threatened or endangered species known to be on or near the site (include federal- and state-listed species).

TSU Number	FMU_ID	Common Name	Federal Listing Status	WA State Listing Status
1	44176	SPOTTED OWL: Site:151-SHUWAH CREEK	THREATENED	ENDANGERED
1	44176	BALD EAGLE	THREATENED	THREATENED
2	21946	SPOTTED OWL: Site:151-SHUWAH CREEK	THREATENED	ENDANGERED
2	21946	BALD EAGLE	THREATENED	THREATENED
3	21947	WINTER STEELHEAD	THREATENED	CANDIDATE
3	21947	SUMMER CHINOOK	THREATENED	CANDIDATE
3	21947	SPRING CHINOOK	THREATENED	CANDIDATE
3	21947	SPOTTED OWL: Site:151-SHUWAH CREEK	THREATENED	ENDANGERED
3	21947	SOCKEYE	THREATENED	CANDIDATE



3	21947	FALL CHINOOK	THREATENED	CANDIDATE
3	21947	CHUM	THREATENED	CANDIDATE
3	21947	BALD EAGLE	THREATENED	THREATENED
4	44279	SPOTTED OWL: Site:151-SHUWAH CREEK	THREATENED	ENDANGERED

**Note: The threatened fish species shown above are in the Sol Duc River system located to the north of this proposal. This proposal is located within the Shuwah Creek spotted owl circle Site:151, which is a status 1R circle and falls under the guidance of SPM01-13 for the OESF.**

- c.

Is the site part of a migration route? If so, explain.

X

Pacific flyway

Other migration route:

Explain if any boxes checked:

**This site is part of the Pacific flyway but is not used extensively for resting or feeding by waterfowl.**

- d.

Proposed measures to preserve or enhance wildlife, if any:

**Aggregated and dispersed retention trees will provide structure for many wildlife species to use. The density of leave trees will average eight trees per acre for the sale. Snags and down wood will also be provided. The new open cover type created by the harvest will enhance foraging opportunities for some wildlife species.**

**A very small portion (approx. 2 –3 acres) of Unit 1 is located within ½ mile of a Bald Eagle territory located in Sec. 2 (29-13) along the Sol Duc River.**

6. Energy and Natural Resources

- a.

What kinds of energy (electric, natural gas, oil, wood stove, solar) will be used to meet the completed project’s energy needs? Describe whether it will be used for heating, manufacturing, etc.

Does not apply.
- b.

Would your project affect the potential use of solar energy by adjacent properties? If so, generally describe.

No
- c.

What kinds of energy conservation features are included in the plans of this proposal? List other proposed measures to reduce or control energy impacts, if any:

None

7. Environmental Health

- a.

Are there any environmental health hazards, including exposure to toxic chemicals, risk of fire and explosion, spill, or hazardous waste, that could occur as a result of this proposal? If so, describe.

1)

Describe special emergency services that might be required.

Minimal hazard incidental to operating heavy machinery. Harvest operations will increase the risk of fire for a period of time. Contract language and State burning rules will require operations to be performed in a manner that will reduce the risk of fire. Fire suppression tools and equipment will be made readily available on site.

2)

Proposed measures to reduce or control environmental health hazards, if any:

Pump trucks and/or pump trailers will be required on site during fire season.
- b.

Noise

1)

What types of noise exist in the area which may affect your project (for example: traffic, equipment, operation, other)?

None

2)

What types and levels of noise would be created by or associated with the project on a short-term or long-term basis (for example: traffic, construction, operation, other)? Indicate what hours noise would come from this site.

None

3)

Proposed measures to reduce or control noise impacts, if any:

No

8. Land and Shoreline Use

- a.

What is the current use of the site and adjacent properties? (Site includes the complete proposal, e.g. rock pits and access roads.)

Timber production and forest management activities.
- b.

Has the site been used for agriculture? If so, describe.

No
- c.

Describe any structures on the site.

None
- d.

Will any structures be demolished? If so, what?

Does not apply.
- e.

What is the current zoning classification of the site?

Forestland
- f.

What is the current comprehensive plan designation of the site?

Commercial forestry
- g.

If applicable, what is the current shoreline master program designation of the site?

Does not apply.
- h.

Has any part of the site been classified as an “environmentally sensitive” area? If so, specify.

No

- i. Approximately how many people would reside or work in the completed project?  
**Does not apply.**
- j. Approximately how many people would the completed project displace?  
**Does not apply.**
- k. Proposed measures to avoid or reduce displacement impacts, if any:  
**Does not apply.**
- l. Proposed measures to ensure the proposal is compatible with existing and projected land uses and plans, if any:  
**The design of this project is consistent with current comprehensive plans and procedures pertaining to DNR's Habitat Conservation Plan.**

9.       **Housing**

- a. Approximately how many units would be provided, if any? Indicate whether high, middle, or low-income housing.  
**Does not apply.**
- b. Approximately how many units, if any, would be eliminated? Indicate whether high, middle, or low-income housing.  
**Does not apply.**
- c. Proposed measures to reduce or control housing impacts, if any:  
**Does not apply.**

10.      **Aesthetics**

- a. What is the tallest height of any proposed structure(s), not including antennas; what is the principle exterior building material(s) proposed?  
**Does not apply.**
- b. What views in the immediate vicinity would be altered or obstructed?  
**The majority of the sale area will be void of timber until regeneration is established.**
  - 1)     *Is this proposal visible from a residential area, town, city, developed recreation site, or a scenic vista?*  
**X No    ☐ Yes, viewing location:**
  - 2)     *Is this proposal visible from a major transportation or designated scenic corridor (county road, state or interstate highway, US route, river, or Columbia Gorge SMA)?*  
**☐ No   X Yes, scenic corridor name:**  
**Portions of units 2 and 3 will be visible from Hwy 101 near Beaver.**
  - 3)     *How will this proposal affect any views described in 1) or 2) above?*  
**A portion of units 2 and 3 will be visible along a very short segment of Highway 101. It is located in the background of the visible area and will only be briefly visible while traveling the highway.**
- c. Proposed measures to reduce or control aesthetic impacts, if any:  
**Retention trees and riparian leave areas will help break up the visible area described above.**

11.      **Light and Glare**

- a. What type of light or glare will the proposal produce? What time of day would it mainly occur?  
**None**
- b. Could light or glare from the finished project be a safety hazard or interfere with views?  
**No**
- c. What existing off-site sources of light or glare may affect your proposal?  
**None**
- d. Proposed measures to reduce or control light and glare impacts, if any:  
**None**

12.      **Recreation**

- a. What designated and informal recreational opportunities are in the immediate vicinity?  
**The area of this proposal sees some use for informal hunting activities during the fall months.**
- b. Would the proposed project displace any existing recreational uses? If so, describe:  
**No**
- c. Proposed measures to reduce or control impacts on recreation, including recreation opportunities to be provided by the project or applicant, if any:  
**None**

13.      **Historic and Cultural Preservation**

- a. Are there any places or objects listed on, or proposed for national, state, or local preservation registers known to be on or next to the site? If so, generally describe.  
**No**
- b. Generally describe any landmarks or evidence of historic, archaeological, scientific, or cultural importance known to be on or next to the site.  
**Does not apply.**

- c. Proposed measures to reduce or control impacts, if any:  
(Include all meetings or consultations with tribes, archaeologists, anthropologists or other authorities.)  
**None**

**14. Transportation**

- a. Identify public streets and highways serving the site, and describe proposed access to the existing street system. Show on site plans, if any. **U.S. Hwy 101 and the Mary Clark county road.**
- 1) *Is it likely that this proposal will contribute to an existing safety, noise, dust, maintenance, or other transportation impact problem(s)?* **No**
- b. Is site currently served by public transit? If not, what is the approximate distance to the nearest transit stop?  
**No**
- c. How many parking spaces would the completed project have? How many would the project eliminate?  
**Does not apply.**
- d. Will the proposal require any new roads or streets, or improvements to existing roads or streets, not including driveways? If so, generally describe (indicate whether public or private).  
  
**Yes, approximately 1,790' of new forest roads will be constructed with this proposal.**
- 1) *How does this proposal impact the overall transportation system/circulation in the surrounding area, if at all?*  
  
**This proposal is located in an area that sees heavy use from timber related uses and traffic and will have no additional impacts to the transportation system.**
- e. Will the project use (or occur in the immediate vicinity of) water, rail, or air transportation? If so, generally describe.  
**No**
- f. How many vehicular trips per day would be generated by the completed project? If known, indicate when peak volumes would occur.  
**Approximately 15 – 20 trips per day during peak harvest periods.**
- g. Proposed measures to reduce or control transportation impacts, if any:  
**None**

**15. Public Services**

- a. Would the project result in an increased need for public services (for example: fire protection, police protection, health care, schools, other)? If so, generally describe.  
**None**
- b. Proposed measures to reduce or control direct impacts on public services, if any.  
**Does not apply**

**16. Utilities**

- a. Circle utilities currently available at the site: electricity, natural gas, water, refuse service, telephone, sanitary sewer, septic system, other.  
**Does not apply**
- b. Describe the utilities that are proposed for the project, the utility providing the service, and the general construction activities on the site or in the immediate vicinity which might be needed.  
  
**Does not apply**

**C. SIGNATURE**

The above answers are true and complete to the best of my knowledge. I understand that the lead agency is relying on them to make its decision.

Completed by: **Mike Potter**  
Date: **6/10/0**  
Title **Tvee Unit Forester**